

ABSTRACT:

INCREASE IN THE MELTING POINT AND THE ENTHALPY OF MELTING OF POLYAMIDES BY A WATER TREATMENT

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The present invention relates to a method for increasing at least one of the following two parameters of a polyamide: (i) its melting point and (ii) its enthalpy of melting ΔH_m , in which:

- this polyamide is brought into contact in the solid state with water or with steam at a temperature close to its crystallization temperature T_c for a time long enough to effect this increase;
- then, the water (or steam) is separated from the polyamide and the polyamide is dried.

The polyamide may be a homopolyamide or a copolyamide. It may be a blend of a polyamide and of at least one other polymer, the polyamide forming the matrix and the other polymer or polymers forming the dispersed phase.

Advantageously, the polyamide is in divided form, such as powder or granules. The granules thus treated may then be ground in order to make powders.

The present invention also relates to a process for manufacturing polyamide objects by the sintering of polyamide powders by melting them using radiation, the powders having been treated according to the abovementioned method or resulting from the grinding of granules treated according to the abovementioned method. As an example of radiation, mention may be made of that provided by a laser beam (the process is then called laser sintering). Mention may also be made of the process in which a mask is placed between the powder layer and the radiation source, the powder particles protected from the radiation by the mask not being sintered.